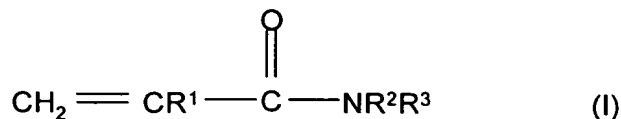


We claim:-

1. A copolymer obtainable by free radical polymerization of a monomer mixture comprising

- a) tert-butyl acrylate and/or tert-butyl methacrylate,
- b) at least one  $\alpha,\beta$ -ethylenically unsaturated amido-containing compound of the formula I



where

$\text{R}^1$  is H or  $\text{C}_1\text{-C}_4$ -alkyl,

$\text{R}^2$  and  $\text{R}^3$ , independently of one another, are H or  $\text{C}_1\text{-C}_4$ -alkyl or  $\text{R}^2$  and  $\text{R}^3$  together with the nitrogen atom to which they are bonded may also be a 4- to 7-membered heterocycle,

with the proviso that the sum of the carbon atoms of the radicals  $\text{R}^1$ ,  $\text{R}^2$  and  $\text{R}^3$  is not more than 4, and

- c) acrylic acid.

2. The copolymer according to claim 1, wherein the component a) comprises tert-butyl acrylate or consists thereof.
3. The copolymer according to either of the preceding claims, wherein the component b) is selected from acrylamide, methacrylamide, N-methyl(meth)acrylamide, N-ethyl(meth)acrylamide, N-propyl(meth)acrylamide, N-(n-butyl)acrylamide, N-(sec-butyl)acrylamide, N-(tert-butyl)acrylamide, N,N-dimethyl(meth)acrylamide, N,N-diethylacrylamide, N-acryloylmorpholine, N-acryloylpiperazine, N-(meth)acryloylpyrrolidine and mixtures thereof.
4. The copolymer according to any of the preceding claims, wherein the component b) comprises methacrylamide and/or N-(tert-butyl)acrylamide or consists of methacrylamide and/or N-(tert-butyl)acrylamide.
5. The copolymer according to any of the preceding claims, which additionally comprises methacrylic acid incorporated in the form of polymerized units as component d).

6. The copolymer according to any of the preceding claims, which additionally comprises, as component e), incorporated in the form of polymerized units, at least one compound having an  $\alpha,\beta$ -ethylenically unsaturated double bond capable of free radical polymerization and at least one cationogenic and/or cationic group per molecule.
7. The copolymer according to claim 6, wherein the component e) is selected from esters of  $\alpha,\beta$ -ethylenically unsaturated mono- and dicarboxylic acids with amino alcohols which may be mono- or dialkylated on the amine nitrogen, amides of  $\alpha,\beta$ -ethylenically unsaturated mono- and dicarboxylic acids with diamines which have at least one primary or secondary amino group, N,N-diallylamine, N,N-diallyl-N-alkylamines and derivatives thereof, vinyl- and allyl-substituted nitrogen heterocycles, vinyl- and allyl-substituted heteroaromatic compounds and mixtures thereof.
8. The copolymer according to claim 7, wherein the component e) comprises at least one compound which is selected from N-(tert-butyl)aminoethyl (meth)acrylate, N,N-dimethylaminoethyl (meth)acrylate, N-[3-(dimethylamino)propyl](meth)acrylamide, vinylimidazole and mixtures thereof.
9. The copolymer according to any of the preceding claims, which additionally comprises, incorporated in the form of polymerized units, at least one further monomer f) which is selected from esters of  $\alpha,\beta$ -ethylenically unsaturated mono- and dicarboxylic acids with C<sub>1</sub>-C<sub>30</sub>-alkanols and C<sub>1</sub>-C<sub>30</sub>-alkanediols, which esters differ from component a), amides of  $\alpha,\beta$ -ethylenically unsaturated mono- and dicarboxylic acids with C<sub>2</sub>-C<sub>30</sub>-amino alcohols which have a primary or secondary amino group, N-vinyl lactams, N-vinyl amides of saturated monocarboxylic acids, primary amides of  $\alpha,\beta$ -ethylenically unsaturated monocarboxylic acids and N-alkyl and N,N-dialkyl derivatives thereof, which primary amides differ from component b), esters of vinyl alcohol and allyl alcohol with C<sub>1</sub>-C<sub>30</sub>-monocarboxylic acids, vinyl ethers, vinylaromatics, vinyl halides, vinylidene halides, C<sub>1</sub>-C<sub>8</sub>-monoolefins, non-aromatic hydrocarbons having at least two conjugated double bonds and mixtures thereof.
10. The copolymer according to claim 9, the component f) being selected from C<sub>1</sub>-C<sub>3</sub>-alkyl methacrylates, hydroxy-C<sub>1</sub>-C<sub>3</sub>-alkyl methacrylates and mixtures thereof.
11. The copolymer according to claim 10, the component f) comprising or consisting of ethyl methacrylate.
12. The copolymer according to any of the preceding claims, which comprises, incorporated in the form of polymerized units,
  - from 30 to 90, particularly preferably from 40 to 85, % by weight of at least one compound a),

- from 3 to 50, particularly preferably from 5 to 40, in particular from 10 to 35, % by weight of at least one compound b),
- 5      - from 5 to 40, particularly preferably from 7 to 35, in particular from 10 to 30, % by weight of acrylic acid c),
- from 0 to 25, particularly preferably from 1 to 20, in particular from 5 to 15, % by weight of methacrylic acid d),
- 10      - from 0 to 25, particularly preferably from 1 to 20, in particular from 2 to 10, % by weight of at least one compound e),
- from 0 to 25, particularly preferably from 0.1 to 20, in particular from 5 to 15, % by weight of at least one compound f),
- 15      - from 0 to 5, particularly preferably from 0.01 to 3, in particular from 0.1 to 2, % by weight of at least one crosslinking agent g).
- 20      13. The copolymer according to any of claims 1 to 12, which consists of repeating units of
  - tert-butyl acrylate,
  - methacrylamide and/or N-(tert-butyl)acrylamide,
  - acrylic acid.
- 25      14. The copolymer according to any of claims 1 to 12, which consists of repeating units of
  - tert-butyl acrylate,
  - 30      - methacrylamide and/or N-(tert-butyl)acrylamide,
  - acrylic acid and
  - methacrylic acid.
- 35      15. The copolymer according to any of claims 1 to 12, which consists of repeating units of
  - tert-butyl acrylate,
  - N-acryloylmorpholine or N,N-dimethylacrylamide and
  - acrylic acid.
- 40      16. The copolymer according to any of claims 1 to 12, which consists of repeating units of
  - tert-butyl acrylate,
  - 45      - methacrylamide and/or N-(tert-butyl)acrylamide,
  - N-vinylpyrrolidone and

- acrylic acid.
17. The copolymer according to any of claims 1 to 12, which consists of repeating units of
- 5
- tert-butyl acrylate,
  - methacrylamide and/or N-(tert-butyl)acrylamide,
  - N-vinylpyrrolidone,
  - acrylic acid and
- 10
- methacrylic acid.
18. The copolymer according to any of claims 1 to 12, which consists of repeating units of
- 15
- tert-butyl acrylate,
  - tert-butyl methacrylate,
  - methacrylamide and/or N-(tert-butyl)acrylamide and
  - acrylic acid.
- 20
19. The copolymer according to any of claims 1 to 12, which consists of repeating units of
- tert-butyl acrylate,
  - tert-butyl methacrylate,
- 25
- methacrylamide and/or N-(tert-butyl)acrylamide,
  - acrylic acid and
  - methacrylic acid.
- 30
20. The copolymer according to any of claims 1 to 12, which consists of repeating units of
- tert-butyl acrylate and/or tert-butyl methacrylate,
  - methacrylamide and/or N-(tert-butyl)acrylamide,
  - acrylic acid and
- 35
- N-(tert-butyl)aminoethyl (meth)acrylate or N-[3-(dimethylamino)-propyl]methacrylamide or N-vinylimidazole.
- 40
21. The copolymer according to any of claims 1 to 12, which consists of repeating units of
- tert-butyl acrylate and/or tert-butyl methacrylate,
  - methacrylamide and/or N-(tert-butyl)acrylamide,
  - acrylic acid,
  - methacrylic acid and
- 45
- N-(tert-butyl)aminoethyl (meth)acrylate or N-[3-(dimethylamino)propyl]-methacrylamide or N-vinylimidazole.

22. The copolymer according to any of claims 1 to 12, which comprises, incorporated in the form of polymerized units,
- 5       a)     tert-butyl acrylate and/or tert-butyl methacrylate,  
       b)     methacrylamide and/or N-(tert-butyl)acrylamide,  
       c)     acrylic acid and  
       f)     at least one compound which is selected from C<sub>1</sub>-C<sub>3</sub>-alkyl methacrylates,  
              hydroxy-C<sub>1</sub>-C<sub>3</sub>-alkyl methacrylates and mixtures thereof,
- 10       with the proviso that the proportion by weight of component a) is equal to or greater than the proportion by weight of component f).
23. The copolymer according to claim 22, which consists of repeating units of
- 15       -     tert-butyl acrylate,  
       -     methacrylamide and/or N-(tert-butyl)acrylamide,  
       -     acrylic acid  
       -     methacrylic acid and  
20       -     ethyl methacrylate.
24. The copolymer according to any of claims 1 to 12, which comprises, based in each case on the total weight of the monomers used for the polymerization,
- 25       -     from 40 to 80% by weight, preferably from 45 to 75% by weight, of tert-butyl acrylate and ethyl methacrylate, with the proviso that the proportion by weight of tert-butyl methacrylate is equal to or greater than the proportion by weight of ethyl methacrylate,
- 30       -     from 5 to 30% by weight, preferably from 7 to 25% by weight, of methacrylamide and/or N-(tert-butyl)acrylamide,
- from 5 to 30% by weight, preferably from 5 to 15% by weight, of acrylic acid and
- 35       -     from 0 to 25% by weight, preferably from 5 to 20% by weight, of methacrylic acid,
- incorporated in the form of polymerized units.
- 40       25. A cosmetic or pharmaceutical composition comprising
- A)     at least one copolymer as defined in any of claims 1 to 24 and
- 45       B)     at least one cosmetically or pharmaceutically acceptable carrier.

26. The composition according to claim 25, wherein the component B) is selected from
- i) water,
  - 5 ii) water-miscible organic solvents, preferably C<sub>2</sub>-C<sub>4</sub>-alkanols, in particular ethanol,
  - iii) oils, fats, waxes,
  - iv) esters of C<sub>6</sub>-C<sub>30</sub>-monocarboxylic acids with monohydric, dihydric or trihydric alcohols, which esters differ from iii),
  - 10 v) saturated acyclic and cyclic hydrocarbons,
  - vi) fatty acids,
  - vii) fatty alcohols,
  - viii) propellants
- 15 and mixtures thereof.
27. The composition according to either of claims 25 and 26, comprising at least one additive which differs from the components A) and B) and is selected from cos-
- 20 metically active substances, emulsifiers, surfactants, preservatives, perfume oils, thickeners, hair polymers, hair and skin conditioners, graft polymers, water-soluble or dispersible silicone-containing polymers, light stabilizers, bleaches, gel formers, care compositions, colorants, tinting compositions, tanning compositions, dyes, pigments, consistency agents, humidifiers, refatting agents, collagen, protein hydrolysis products, lipids, antioxidants, antifoams, antistatic agents,
- 25 emollients and softeners.
28. The composition according to any of claims 25 to 27 in the form of a gel, foam, spray, mousse, ointment, cream, emulsion, suspension, lotion, milk or paste.
- 30 29. The use of a copolymer, as defined in any of claims 1 to 24, in skin cleansing compositions, compositions for care and protection of the skin, nail care compositions, formulations for decorative cosmetics and hair treatment compositions.
- 35 30. The use according to claim 29 as setting compositions and/or as conditioners in hair treatment compositions.
31. The use according to claim 30, wherein the composition is present in the form of a hair gel, shampoo, foam setting composition, hair lotion, hair spray or hair foam.
- 40 32. The use of a copolymer, as defined in any of claims 1 to 24, as an excipient in pharmacy, preferably as or in coating material(s) for solid dosage forms, for modifying rheological properties, as a surface-active compound, as or in adhesive(s) or as or in coating material(s) for the textile, paper, printing and leather industry.
- 45